



New Therapies and Technologies

February 22-26, 2016

Regenerative Medicine can be defined as the enhancement or trigger of the natural tissue regeneration process to restore normal function. It refers to a group of biomedical approaches that include (stem) cell-based therapies, the administration of biologically active molecules, the implantation of in vitro grown tissues or different combinations of the former.

Nanomedicine is the application of nanotechnology to achieve innovation in healthcare. It uses the properties developed by a material at its nanometric scale, which often differ in terms of physics, chemistry or biology from the same material at a bigger scale. Nanomedicine is understood to be a key enabling instrument for personalized, targeted and regenerative medicine by delivering the next level of new drugs, treatments and implantable devices to clinicians and patients, for real breakthroughs in healthcare.

In this module these two vibrant fields will be addressed and their intertwining presented.

Specific topics of the program include:

- Fundamentals of biomaterials science and engineering
- Stem Cells in Regenerative Biology and Medicine
- Biomaterial and scaffold design
- Biosensors
- Bioimaging
- Cell-material interactions
- Nanorobots
- Tissue engineering

Speakers

Ana Paula Pêgo

INEB | i3S, nBTT – Nanobiomaterials for Targeted Therapies Group, Universidade do Porto, Portugal

Introduction – Biomaterials and Regenerative Medicine

"Nanotechnology at the service of nerve regeneration"

João Cortez

INEB | i3S, Business Development & International Projects Officer, Universidade do Porto, Portugal

"Pitching your project for success"

Meriem Lamghari

INEB | i3S, nBTT – Nanobiomaterials for Targeted Therapies Group, Universidade do Porto, Portugal

"Neural pathways and skeletal systems interplay"

Manuela Brás

INEB | i3S, Biointerfaces and Nanotechnology Platform, Universidade do Porto, Portugal

Bioimaging for Regenerative Therapies and Nanotechnology

M^a Cristina L Martins

INEB | i3S, nBTT – Nanobiomaterials for Targeted Therapies Group, Universidade do Porto, Portugal
 “NanoBiomaterials to fight infection”

Maria Lázaro

INEB | i3S, bIMAGE Platform, Universidade do Porto, Portugal
 Bioimaging for Regenerative Therapies and Nanotechnology

Mário Barbosa

INEB | i3S, Microenvironments for NewTherapies Group, Portugal
 “Inflammation at biomaterial/tissue repairing interfaces”

Nuno Santos

Instituto de Medicina Molecular, Biomembranes Unit, Lisboa, Portugal
 “Strategies for the inhibition of viral entry and assembly”

Pedro Granja

INEB | i3S, Biocarrier - Biomaterials for Multistage Drug and Cell Delivery Group, Portugal
 “Cellularized hydrogels in advanced bioengineering strategies”

Perpétua Pinto do Ó

INEB | i3S, Microenvironments for NewTherapies Group, Portugal
 “Stem Cells in Regenerative Biology and Medicine: promises, obstacles and accomplishments”

Samuel Sanchez

IBEC, Smart nano-bio-devices, Barcelona, Spain
 Max Planck Institute, Lab-in-a-tube and Nanorobotic Biosensors, Germany
 Nano-robots: The future smart tools for medicine?

PROGRAM

22 February	23 February	24 February	25 February	26 February
9:30-11:00 Ana Paula Pêgo <i>Break</i>	9:00-10:30 Meriem Lamghari <i>Break</i>	9:30-10:30 Samuel Sanchez <i>Break</i>	9:30-12:30 Bioimaging for Regenerative Therapies	PROJECT
11:30-13:00 Pedro Granja	11:00-12:30 Cristina Martins	11:00-12:00 Samuel Sanchez		
14:30-16:00 Mário Barbosa <i>Break</i>	15:00-16:00 Nuno Santos <i>Break</i>	PROJECT	14:00-16:00 Perpétua Pinto do Ó	14:00-16:00 PROJECT PRESENTATION
16:30-18:00 João Cortez	16:15 -17:15 Nuno Santos			

Lectures will be held at the MEETING ROOM B of i3S, except on Wednesday morning that lectures will be held in MEETING ROOM A.

The practical session on Bioimaging will be held in the bIMAGE service (Floor 0, i3S)